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FIELD MODIFICATION INSTRUCTIONS

FOR

HORIZON SIDE SIGN OPEN CONNECTOR INSTALLATION AND CONNECTOR PWA REPLACEMENT

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Project Engineer Masias, Marty	DATE 09/04/2009	Luminator A MARK IV INDUSTRIES COMPANY PLANO, TEXAS				
Checker R. Harness	DATE 09/17/2009	TITLE FIELD MODIFICATION INSTRUCTIONS FOR HORIZON SIDE SIGN OPEN CONNECTOR COVER				
Project Manager Konecki, Nancy	DATE 09/04/2009					
		SIZE A	CODE IDENT. NO. 17744		DRAWING NO. 904666	
		SCALE NONE		REV. A	SHEET 1 OF 10	

WARNINGS

BE SURE ELECTRIC POWER IS OFF BEFORE WORKING ON WIRING. FAILURE TO DO SO MAY RESULT IN DAMAGE TO SIGN EQUIPMENT AND RENDER SIGN INOPERATIVE.

USE CAUTION WHEN SPRAYING CORROSION X TO AVOID SPRAY DRIPPING ON SURROUNDING MATERIALS. SAFETY GLASSES SHOULD BE WORN WHEN USING AEROSOL CLEANING AGENTS TO AVOID EYE INJURY. IF SPRAY CONTACTS SKIN, WASH AS DIRECTED ON CAN.

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1.0 OBJECTIVE

This Field Modification procedure contains instructions for reworking Horizon LED display side signs and side route signs with an open connector on buses without a rear sign.

On 2006 and older buses the connector PWA part number 506746-001 will be replaced with connector board part number 508331-001 and with vinyl cap part number 801403-001.

On 2007 and newer buses, a vinyl cap, part number 801403-001 will be added to the open connector.

NOTE: Some Transit Properties may have a street side and curb side sign. Every side sign and side route signs will require a vinyl cap if there is an open connector.

2.0 REASON FOR CHANGES

On signs with an open connector, debris, moisture, corrosion, etc. can cause a short to develop between power connections possibly resulting in sign failure and in rare instances smoke and/or fire.

3.0 REFERENCE DOCUMENTS

Luminator Part Number	Description	ICD Drawing
510545-ALL	Horizon LED side sign	ICD510545
510544-ALL	Horizon LED Side Sign, 4"	ICD510544
510565 ALL	Horizon LED Side Route Sign	ICD510565

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4.0 COMPONENTS REQUIRED

Description	2007 and Older Required Part Numbers	2008 and newer Part Numbers
Cap, Vinyl, .75 INCH ID	801403-001	801403-001
Corrosion X Cleaner/Penetration spray	801409-001	801409-001
Connector PWA	508331-001	
Hardware retained from signs at removal	NA	NA
Label, FMI	NA	NA

5.0 TOOLS REQUIRED

- Safety Glasses
- Screwdriver, No. 2 and No. 3 Phillips
- 3/8" Wrench and/or Ratchet with 3/8" socket
- 7/16" Nut driver and/or Ratchet with 7/16" socket

6.0 PROCEDURES AND RECOMMENDATIONS

PART 1 – 2007 AND OLDER BUSES SEE SECTION 6.1

PART 2 – 2008 AND NEWER BUSES SEE SECTION 6.2

6.1 CONNECTOR BOARD INSTALLATION IN BUSES 2007 AND OLDER

- 1 Verify sign operation before proceeding.
- 2 Gain access to power/data connector located on end panel of sign by removing top 2 mounting bolts and rotating sign downwards. Retain hardware for sign reinstallation. Vehicle type and manufacturer will determine access to cable connector. **See Fig. 3**

Note: Sign may need to be removed completely if there is not enough clearance between the sign and the window frame.

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Fig. 3 Sign Mounting

- 3 Remove power/data cable.
- 4 Remove the plastic front cover by removing 8 Phillips head screws. Retain hardware for sign reassembly. See Fig. 4a.
- 5 Disconnect the 8 pin J1 connector from the unicolor. See Fig.4b



Fig.4a Exterior of side sign



Fig. 4b Internal of Side Sign

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- 6 Depending on sign type a Phillips screw driver or a 7/16 socket will be needed to remove the connector board. Retain hardware for sign reassembly. See Fig. 5 and 6



Fig. 5 (screw mounting)

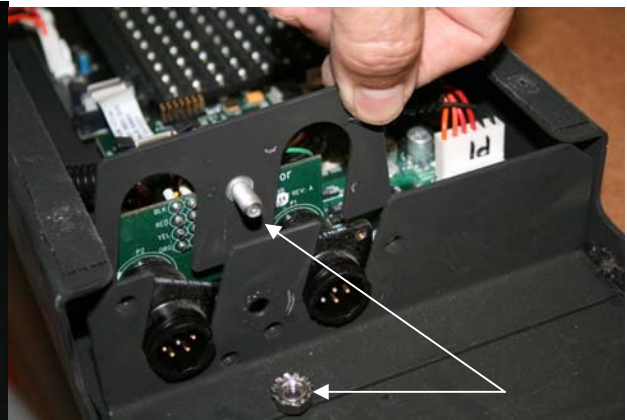


Fig. 6 (Bracket mounting)

- 7 For screw mounting (Figure 5) Remove 2 mounting nuts and rotate bracket outwards to remove. Remove 7 screws to release connector from bracket. Reverse procedure to install new connector board
- 8 For Bracket Mounting (Figure 6) Remove mounting nut and slide bracket back and pull up to remove. Pull connector board up and out. Reverse procedure to install new connector board.
- 9 Reassemble sign by performing Steps 8 – 2 in reverse order.
- 10 Confirm that light pipe is still properly installed per Figure 7.

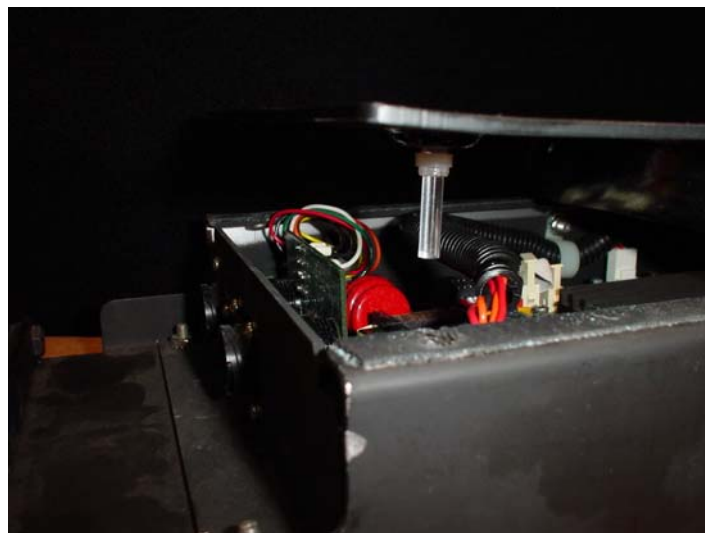


Figure 7, Light Pipe Installation

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- 11 Reattach power/data cable.
- 12 Install vinyl cap on open (unused) connector.
- 13 Reinstall sign assembly on bus.
- 14 Check sign for proper operation. Cycling power to the sign system may be required for the side sign to be recognized.
- 15 Record bus number, bus type, technician performing work, type of work completed and date work was completed on the FMI log sheet. See section 7 for Disposition of Materials
- 16 Install FMI label near part number label on the top of the sign.

6.2 VINYL CAP INSTALLATION PROCEDURE FOR 2008 AND NEWER BUSES

- 1 Verify sign operation before proceeding.
- 2 Gain access to power/data connector located on end panel of sign by removing top 2 mounting bolts and rotating sign downwards. Retain hardware for reassembly. Vehicle type and manufacturer will determine access to cable connector. See **Fig. 1**

Note: Sign may need to be removed completely if there is not enough clearance between the sign and the window frame.



Fig. 1 Sign Mounting

- 3 Note which connector has the power/data cable connected. Disconnect cable from sign. This connector will not require Corrosion X.

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- 4 Spray Corrosion X into the uncovered connector for about 2 second so that it penetrates into the connector down to the PWA inside the sign. See **Fig. 2**



Fig. 2 Spray Corrosion X in unused connector

- 5 Install vinyl cap on same connector.
- 6 Reattach power/data cable. Corrosion X is a dielectric. Power may be applied to the sign immediately after application.
- 7 Reinstall sign assembly on bus.
- 8 Check sign for proper operation. Cycling power to the sign system may be required for the side sign to be recognized.
- 9 Record bus number, technician performing work, date work was completed and type of work performed (I.e. spray and cap or PWA replacement) on the FMI log sheet. See section 7 for Disposition of Materials
- 10 Install FMI label near part number label on the top of the sign.

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7.0 SCHEDULE OF WORK/RESPONSIBILITY FOR MODIFICATION

7.1 Material

Luminator will provide all materials and procedures to complete modifications at no charge.

7.2 Labor

At the customer's option, they can perform the procedures and be responsible for the work.

7.3 Disposition of Materials

1. Collect all removed connector PWA boards.
2. Using prepaid label provided, return all defective connector board PWAs and the FMI Log Sheet, signed by local Maintenance Supervisor to:

Luminator
900 Klein Road
Plano, TX 75074
Attn: A. Brett

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8.0 RECORD OF FIELD MODIFICATIONS COMPLETED

FMI No. 904666, Horizon Connector Board PWA

Bus No	Bus Type	Technician Initials	Date of FMI Completion	Work performed

Transit Authority, Name (printed)

Transit Authority (signature)

Luminator, Name (printed)

Luminator (signature)

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